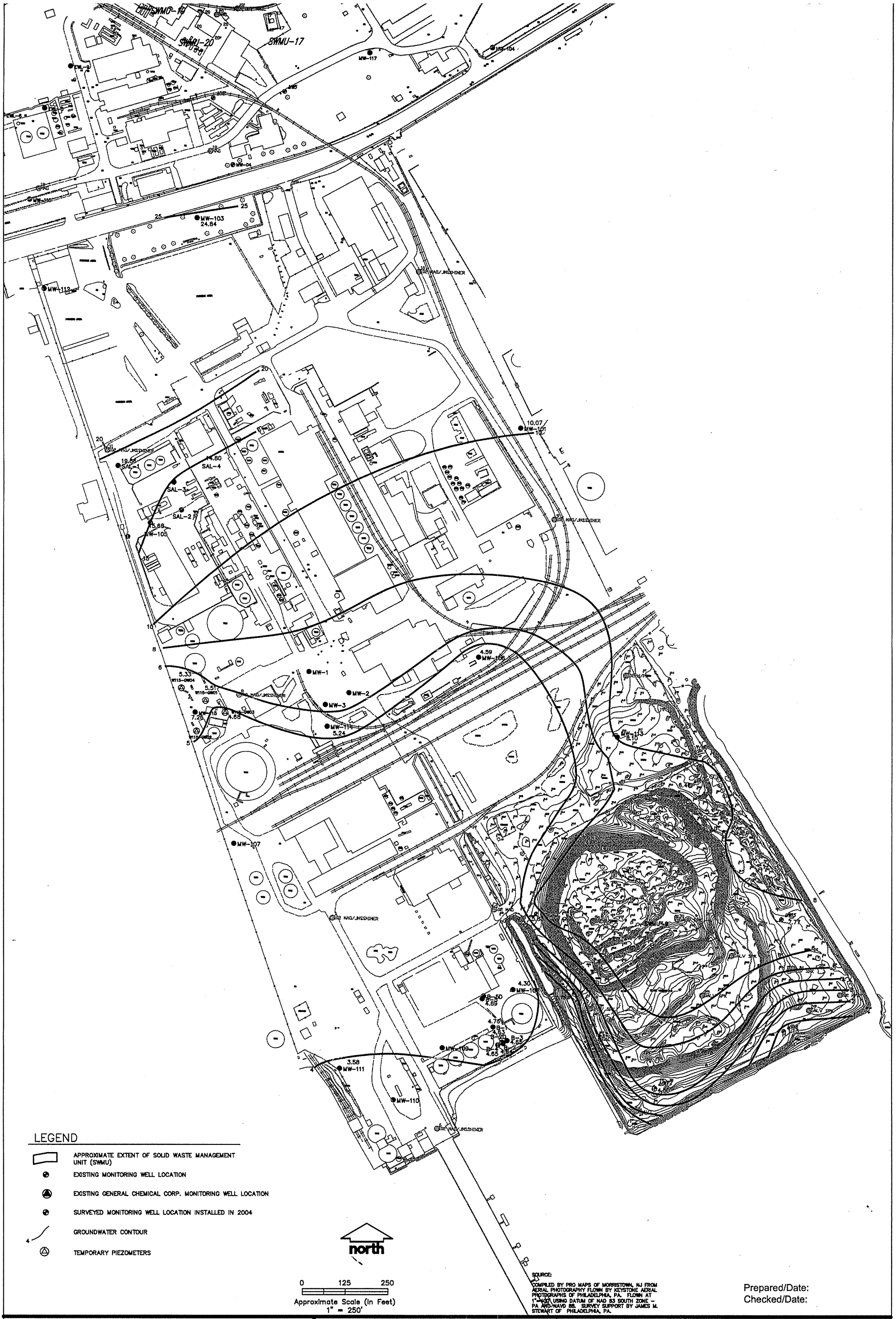


DELAWARE VALLEY
WORKS FACILITY
Route 13
Claymont, DE

MACTEC
MACTEC Engineering and Consulting, Inc.
5205 Militia Hill Road
Plymouth Meeting, PA

GROUNDWATER CONTOUR MAP
MARCH 8, 2007

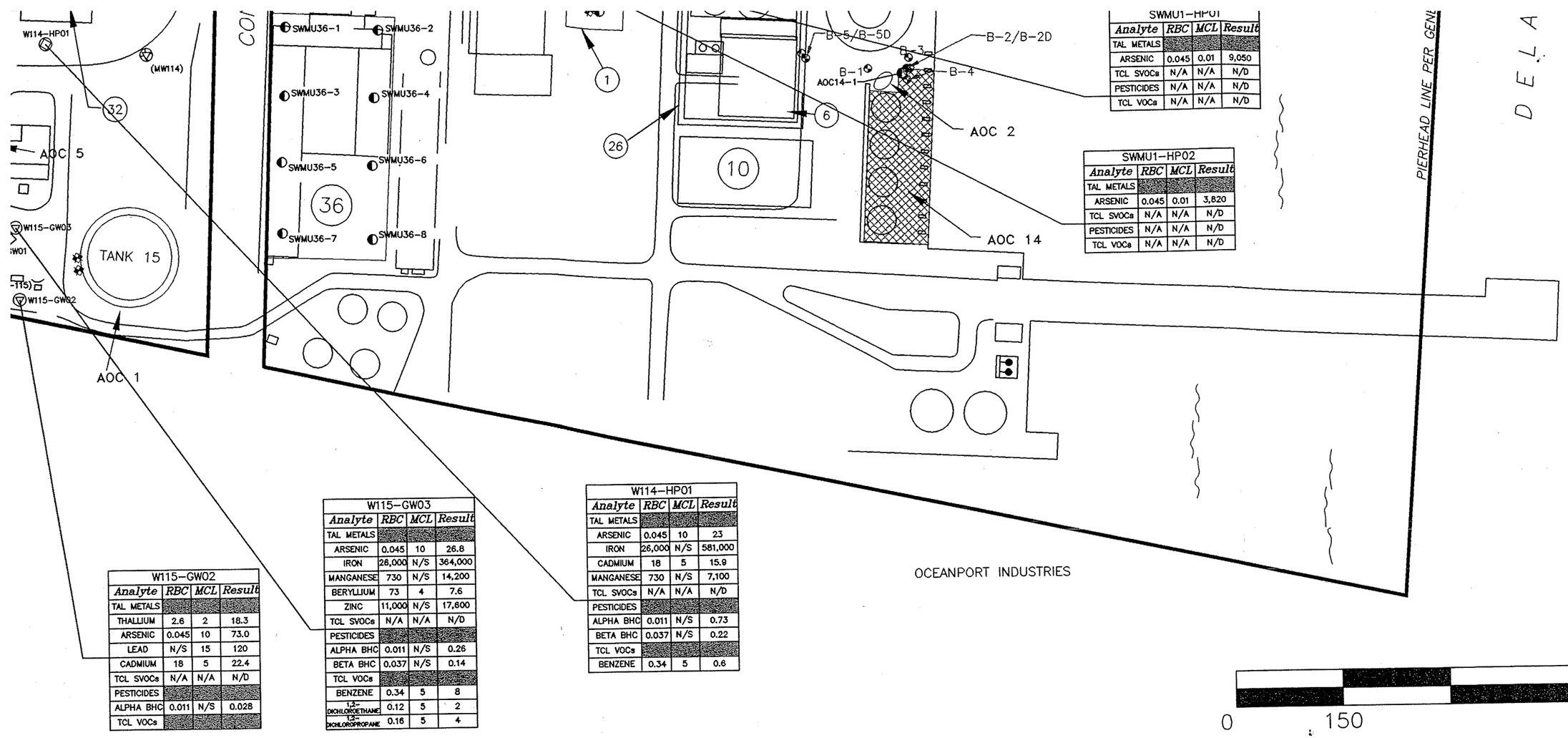
Figure 3-3

DELAWARE VALLEY WORKS FACILITY
Claymont, Delaware

MACTEC
MACTEC Engineering and Consulting, Inc.
5205 Militia Hill Road
Plymouth Meeting, PA

GROUNDWATER CONTOUR MAP
JANUARY 2007

Figure 3-2



SWMU1-HP01

Analyte	RBC	MCL	Result
TAL METALS			
ARSENIC	0.045	0.01	9,050
TCL SVOCs	N/A	N/A	N/D
PESTICIDES	N/A	N/A	N/D
TCL VOCs	N/A	N/A	N/D

SWMU1-HP02

Analyte	RBC	MCL	Result
TAL METALS			
ARSENIC	0.045	0.01	3,820
TCL SVOCs	N/A	N/A	N/D
PESTICIDES	N/A	N/A	N/D
TCL VOCs	N/A	N/A	N/D

W115-GW02

Analyte	RBC	MCL	Result
TAL METALS			
THALLIUM	2.6	2	18.3
ARSENIC	0.045	10	73.0
LEAD	N/S	15	120
CADMIUM	18	5	22.4
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.028
TCL VOCs			

W115-GW03

Analyte	RBC	MCL	Result
TAL METALS			
ARSENIC	0.045	10	26.8
IRON	26,000	N/S	364,000
MANGANESE	730	N/S	14,200
BERYLLIUM	73	4	7.6
ZINC	11,000	N/S	17,600
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.26
BETA BHC	0.037	N/S	0.14
TCL VOCs			
BENZENE	0.34	5	8
1,2-DICHLOROETHANE	0.12	5	2
1,2-DICHLOROPROPANE	0.16	5	4

W114-HP01

Analyte	RBC	MCL	Result
TAL METALS			
ARSENIC	0.045	10	23
IRON	26,000	N/S	581,000
CADMIUM	18	5	15.9
MANGANESE	730	N/S	7,100
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.73
BETA BHC	0.037	N/S	0.22
TCL VOCs			
BENZENE	0.34	5	0.6

CORPORATE HEADQUARTERS

- SOUTH PLANT
are

MACTEC

MACTEC Engineering and Consulting, Inc.
5205 Militia Hill Road
Plymouth Meeting, PA

GROUNDWATER SAMPLING RESULTS FOR CONSTITUENTS OF CONCERN EXCEEDING RBCs OR MCLs

Project 3485060089

Figure 3-1

DISSOLVED METALS reported in ug/L

SVOC's, PESTICIDES AND VOC'S reported in ug/L

N/A = Not Applicable

N/S = No Standard

N/D = Non Detect

NOTES :

1. LOCATION OF IMPROVEMENTS SHOWN ARE BASED ON AN ON THE GROUND FIELD SURVEY DONE BY ND REMY ASSOCIATES DURING FEBRUARY OF 2007.

2. COORDINATES AND ELEVATIONS ON THIS DRAWING WERE OBTAINED BY GPS OBSERVATIONS ALONG WITH TRADITIONAL SURVEY METHODS DURING THE SAME SURVEY, USING USGS BENCHMARK JU0786 AS CONTROL. COORDINATES ARE GIVEN IN THE NAD83 DELAWARE STATE PLANE SYSTEM, ELEVATIONS ARE IN THE NAVD88(1991) DATUM.

3. THIS DRAWING IS FOR WELL REFERENCE ONLY; NO BOUNDARY SURVEY WAS PERFORMED FOR THIS PROJECT.

4. FACILITY GRID IS BASED ON DELAWARE STATE PLANE MERIDIAN, NAD 27.

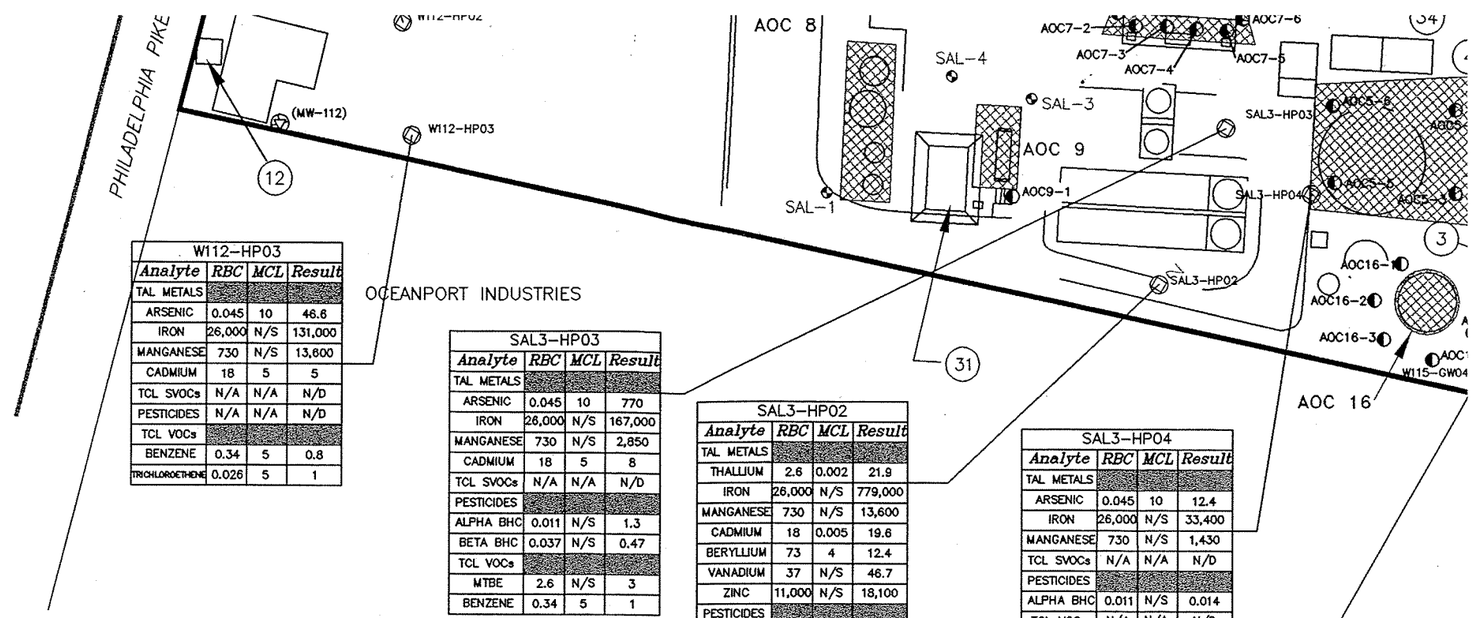
5. Chromium RBC is for Chromium VI

5. Chromium MCL is for Total Chromium

5. Manganese RBC is for non-food Manganese

SOLID WASTE MANAGEMENT UNITS (RFI PHASE I)

1. NORTH PHOSPHORIC ACID POND
2. SOUTH PHOSPHORIC ACID POND
3. RED MUD SLURRY POND A
4. RED MUD SLURRY POND B
5. SPAR BUILDING STORAGE AREA
6. SOUTH TREATMENT PLANT, DRUM STORAGE
7. EFFLUENT CLARIFIER
8. EFFLUENT CLARIFIER
10. SOUTH WASTE TREATMENT STORAGE PAD
11. WASTE OIL AST
12. WASTE OIL UST
26. SOUTH WASTE TREATMENT PLANT
28. HYPO MUDS ACCUMULATION (2 AREAS)
31. FORMER SPENT ACID LAGOON
32. FORMER UST AREA



W112-HP03			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	46.6
IRON	26,000	N/S	131,000
MANGANESE	730	N/S	13,600
CADMIUM	18	5	5
TCL SVOCs	N/A	N/A	N/D
PESTICIDES	N/A	N/A	N/D
TCL VOCs			
BENZENE	0.34	5	0.8
TRICHLOROETHENE	0.026	5	1

SAL3-HP03			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	770
IRON	26,000	N/S	167,000
MANGANESE	730	N/S	2,850
CADMIUM	18	5	8
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	1.3
BETA BHC	0.037	N/S	0.47
TCL VOCs			
MTBE	2.6	N/S	3
BENZENE	0.34	5	1

SAL3-HP02			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
THALLIUM	2.6	0.002	21.9
IRON	26,000	N/S	779,000
MANGANESE	730	N/S	13,600
CADMIUM	18	0.005	19.6
BERYLLIUM	73	4	12.4
VANADIUM	37	N/S	46.7
ZINC	11,000	N/S	18,100
PESTICIDES			
ALPHA BHC	0.011	N/S	0.37
BETA BHC	0.037	N/S	0.074
HEPTACHLOR EPOXIDE	0.0074	0.2	0.012
TCL SVOCs			
CARBAZOLE	3.3	N/S	5
NAPHTHALENE	6.5	N/S	58
PYRIDINE	34	N/S	85
TCL VOCs			
CHLOROFORM	0.15	N/S	0.9
BENZENE	0.34	5	11
1,2-DICHLOROPROPANE	0.16	5	16

SAL3-HP04			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	12.4
IRON	26,000	N/S	33,400
MANGANESE	730	N/S	1,430
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.014
TCL VOCs	N/A	N/A	N/D

W115-GW04			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	16.6
IRON	26,000	N/S	481,000
MANGANESE	730	N/S	34,300
CADMIUM	18	0.005	32.3
BERYLLIUM	73	4	17.2
LEAD	N/S	15	24.8
ZINC	11,000	N/S	17,300
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	51
BETA BHC	0.037	N/S	3.0
GAMMA-BHC	0.037	0.2	7.3
4,4'-DDE	0.2	N/S	0.32
4,4'-DDD	0.28	N/S	0.54
4,4'-DDT	0.2	N/S	2.4
TCL VOCs			
CHLOROFORM	0.15	N/S	6
BENZENE	0.34	5	11

ADDITIONAL SOLID WASTE MANAGEMENT UNITS (RFI PHASE II)

33. FORMER SPRAY POND AREA
34. FORMER WASTE OIL STORAGE PAD
35. FORMER HAZARDOUS WASTE STORAGE PAD
36. FORMER ALUM PLANT AREA/DEBRIS STAGING AREA

AREAS OF CONCERN (RFI PHASE I)

AOC 1 – TANK 15 SPILL AREA
AOC 2 – ACID SPILL AREA
AOC 4 – CONRAIL FUEL SPILL AREA

ADDITIONAL AREAS OF CONCERN (RFI PHASE II)

AOC 5 – FORMER SULFUR STORAGE TANK SPILL
AOC 6 – FORMER ABOVEGROUND FUEL STORAGE TANK A
AOC 7 – FORMER SULFURIC ACID PLANT-UNPAVED AREA
AOC 8 – FORMER SPENT SULFURIC ACID LOADING/UNLOADING AREA SUMPS
AOC 9 – FORMER SPENT SULFURIC ACID STORAGE AREA SUMPS
AOC 10 – FORMER SULFURIC ACID PLANT AREA – ACID AND CAUSTIC STORAGE TANK AREA SUMPS
AOC 11 – FORMER CONTACT SULFURIC ACID PLANT AREA A – AST AREA SUMPS AND BUILDING SUMP
AOC 12 – FORMER CONTACT SULFURIC ACID PLANT AREA B – AST AREA SUMPS
AOC 13 – FORMER PHOTOSALTS PLANT STORAGE TANK AREA SUMPS
AOC 14 – FORMER SULFURIC ACID STORAGE TANK AREA SUMP
AOC 15 – FORMER ACID LOADING/UNLOADING AREA SUMPS
AOC 16 – FORMER ABOVEGROUND FUEL OIL STORAGE TANK C

Prepared/Date: PM
Checked/Date: AE

DELAWARE VALLEY WO
Claymont, D

AOC11–HP01			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	124
IRON	26,000	N/S	2,630,000
MANGANESE	730	N/S	29,500
BERYLLIUM	73	4	65.1
LEAD	N/S	15	97.8
CADMIUM	18	5	77.7
CHROMIUM	110	100	11,300
COPPER	1,500	1,300	3,200
NICKEL	730	N/S	8,840
VANADIUM	37	N/S	5,390
ZINC	11,000	N/S	13,900
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	15
BETA BHC	0.037	N/S	3.0
GAMMA–BHC	0.037	0.2	1.0
4,4'–DDE	0.2	N/S	8.6
4,4'–DDD	0.28	N/S	9.5
4,4'–DDT	0.2	N/S	54
TCL VOCs			
CHLOROFORM	0.15	N/S	4
BENZENE	0.34	5	2

W106–HP01		
Analyte	*RBC*	*MCL*
TAL METALS		
ARSENIC	0.045	10
MANGANESE	730	N/S
TCL SVOCs	N/A	N/A
PESTICIDES		
ALPHA BHC	0.011	N/S
BETA BHC	0.037	N/S
TCL VOCs	N/A	N/A

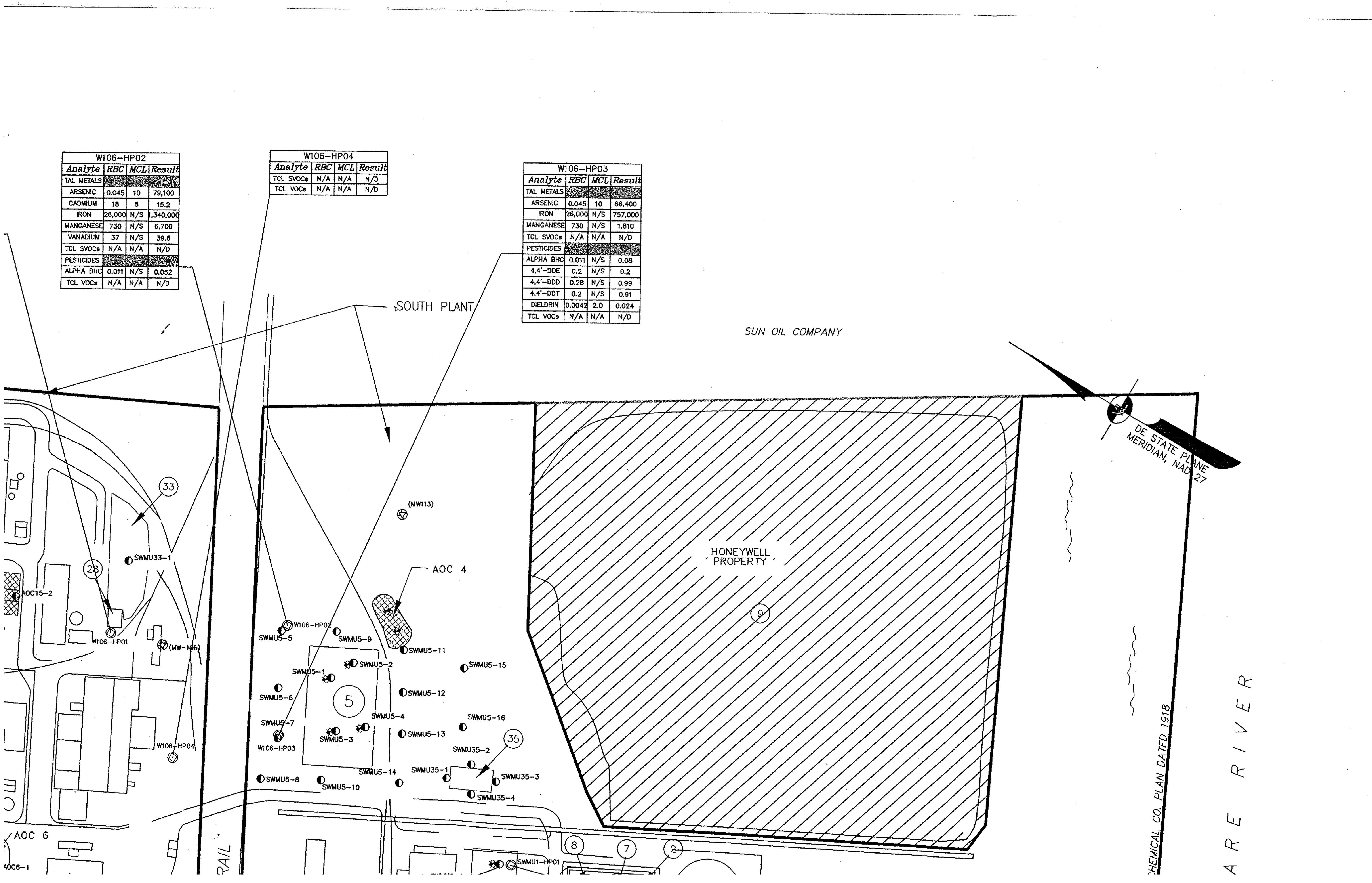
W112–HP02			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
CADMIUM	18	5	5.1
LEAD	N/S	15	19.6
MANGANESE	730	N/S	3,330
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.46
BETA BHC	0.037	N/S	0.075
DIELDRIN	0.0042	N/S	0.008
TCL VOCs			
BENZENE	0.34	5	2
1,2–DICHLOROETHANE	0.12	5	4
TRICHLOROETHENE	0.026	5	4

W112–HP01			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
MANGANESE	730	N/S	4,540
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.98
BETA BHC	0.037	N/S	0.19
4,4'–DDT	0.2	N/S	0.44
TCL VOCs			
CHLOROFORM	0.15	N/S	0.9
BENZENE	0.34	5	3
1,2–DICHLOROETHANE	0.12	5	3
TRICHLOROETHENE	0.026	5	75
TETRACHLORO–ETHENE	0.1	5	10
1,4–DICHLOROBENZENE	0.47	75	2

LEGEND

- PIEZOMETER LOCATION (W114–HP01)
- HYDROPUNCH LOCATION (W115–GW01)
- EXISTING PHASE 1 WELL LOCATION (MW–115)
- HISTORICAL GROUNDWATER MONITORING WELL LOCATION (B–3)
- RFI PHASE I SOIL SAMPLING LOCATION
- APPROXIMATE RFI PHASE II SOIL SAMPLING LOCATION
- GENERAL CHEMICAL LLC PROPERTY BOUNDARY

DELAWARE COUNTY, PENNSYLVANIA
NEW CASTLE COUNTY, DELAWARE
SUN OIL COMPANY
U.S. ROUTE 13)
AOC 13
AOC 12
AOC 11
AOC11–HP01
AOC 10
28



W106-HP02			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	79,100
CADMIUM	18	5	15.2
IRON	26,000	N/S	1,340,000
MANGANESE	730	N/S	6,700
VANADIUM	37	N/S	39.6
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.052
TCL VOCs	N/A	N/A	N/D

W106-HP04			
Analyte	*RBC*	*MCL*	*Result*
TCL SVOCs	N/A	N/A	N/D
TCL VOCs	N/A	N/A	N/D

W106-HP03			
Analyte	*RBC*	*MCL*	*Result*
TAL METALS			
ARSENIC	0.045	10	66,400
IRON	26,000	N/S	757,000
MANGANESE	730	N/S	1,810
TCL SVOCs	N/A	N/A	N/D
PESTICIDES			
ALPHA BHC	0.011	N/S	0.08
4,4'-DDE	0.2	N/S	0.2
4,4'-DDD	0.28	N/S	0.99
4,4'-DDT	0.2	N/S	0.91
DIELDRIN	0.0042	2.0	0.024
TCL VOCs	N/A	N/A	N/D

AOC 8

DELAWARE RIVER

N